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## Patent Abstracts of Japan

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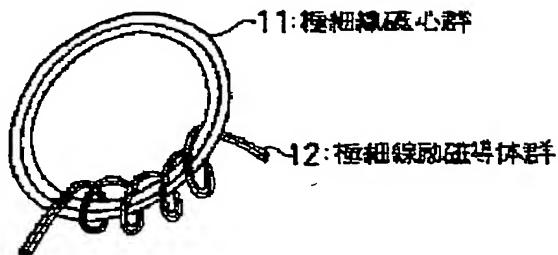
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APPLICANT : AMORPHOUS DENSHI DEVICE  
KENKYUSHO:KK;

INVENTOR : MURAKAMI KOICHI;

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TITLE : MICRO-WIRE INDUCTANCE ELEMENT



ABSTRACT : PURPOSE: To make the working frequency of an element higher and to optimize the magnetic core and excitation conductor of the element so as to reduce the size of the element by making the diameter of the thin wire magnetic core smaller than a specific value and forming the magnetic core of one wire or by bundling numerous thin wires.

CONSTITUTION: A magnetic core 11 is formed by bundling extremely thin amorphous wires manufactured by chemical etching or thin-wire drawing and having a diameter of  $\leq 10\mu\text{m}$ . An excitation conductor 12 is wound around a group of or a plurality of groups of cores 11 thus formed in a toroidal or textile structure. By twisting conductors under a skin effect, an inductance element having a high Q-value and can be used for a high frequency can be obtained, since the inductance element cannot be used for a frequency equal to or higher than 10MHz due to a skin effect when the inductance element is constituted of a thick excitation conductor and, even when thin excitation conductors under a skin effect are used, the Q-value does not increase due to a DC resistance. Therefore, the copper loss and iron loss of the inductance element in a high-frequency region can be reduced and the inductance element can be increased in working frequency and Q-value.

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